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Website Quality, E-satisfaction, and E-loyalty of Users Based on The Virtual Distribution Channel*

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Abstract

Purpose: Technology induces the virtual distribution channel to exist, especially for booking a room online. This situation, indeed, provides an alternative for the customers to book based on their budget through digital platforms. One platform offering competitive prices is virtual hotel operators, such as Airbnb, OYO, RedDoorz, and Airy Rooms. Preferably, after using their platform, the user should be satisfied and loyal. Hence, this investigation aims to prove some associations. The first is between e-satisfaction and e-loyalty. The second is between website quality and e-satisfaction. The final is between website quality and e-loyalty. **Research design, data, and methodology:** This study is quantitatively designed with the sample of 350 users of the virtual hotel operator applications in Bandar Lampung: Airbnb, OYO, RedDoorz, and Airy, as the samples. Therefore, by denoting this sample size, the structural equation model based on covariance is utilized to examine the three hypotheses proposed. Also, to get the responses, this study uses a survey through a questionnaire. **Result:** This investigation demonstrates the positive relationship between e-satisfaction and e-loyalty. Additionally, website quality positively associates with e-satisfaction and e-loyalty. **Conclusion:** The virtual hotel operators must have the superiority on their website-based application to update the information based on the room availability and price, ensure online transaction safety, and facilitate its utilization to maintain long-term satisfaction and loyalty virtually.

Keywords: E-loyalty, E-satisfaction, Virtual Distribution Channel, Website Superiority

JEL Classification Code: M31, N70, O30

1. Introduction

Technology advancement makes internet-based applications worthwhile for people to travel (Danuri, 2019). This circumstance becomes the chance for marketers to market their products globally via their website (Kiani,

1998). For hotels, virtually providing the booking system is the marketing strategy to facilitate their customers to search for rooms (Boz, 2016).

Moreover, through the installed applications on their smartphone (Tseng & Lee, 2018), people can book a room in the hotel by utilizing the virtual distribution channel, i.e., online travel agents (OTA), for example, Agoda.com, Traveloka.com, Ticket.com, Booking.com, etc. (Hendriyati, 2019) or virtual hotel operators (VHO), for instance, RedDoorz from Singapore, and Airy Rooms from Indonesia (Wiastuti & Susilowardhani, 2016), and OYO from India (Kusumawati, 2020). However, unlike the price set by the OTA, the VHO set the lower room price, which may disturb the available standard (Wiastuti & Susilowardhani, 2016). According to the demand law explained by Samuelson and Nordhaus (2010), this condition increases the request from people to order through the VHO applications.

Besides, technology utilization is expected to create e-satisfaction and e-loyalty. E-loyalty of the users is essential

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for online platforms because of its revenue (Kaya, Behraves, Abubakar, Kaya, & Orús, 2019). Furthermore, this income is distributed between this platform provider, such as the VHO, and the client, i.e., property owners (Virgianne, Ariani, & Suarka, 2019). Additionally, e-satisfaction is needed to ensure that the online platform offerings meet user expectations (Kotler & Keller, 2012). Also, it becomes the antecedent of e-loyalty, as Hur, Ko, and Valacich (2011), Ltifi & Gharbi (2012), Ahmad, Rahman, and Khan (2017), Gotama and Indarwati (2019), Giao, Vuong, and Quan (2020), Haq and Awan (2020), Wang and Prompanyo (2020), Sasono et al. (2021) demonstrate.

Furthermore, to support the circumstances mentioned above, a website-based digital platform with quality is demanded. This statement gets supported by two groups of investigation. The first one is the study effectively proving a positive effect of website quality on e-loyalty [see Hur et al. (2011), Winnie (2014), and Giao et al. (2020)]. The second one is the research effectively demonstrating a positive impact of website quality on e-satisfaction [see Kim and Stoel (2004), Bai, Law, and Wen (2008), Hur et al. (2011), Tirtayani and Sukaatmadja (2018), Hsieh (2019), and Giao et al. (2020)].

Despite this significant evidence, contrary study results are still available. For example, the study of Phromlert, Deebhijarn, and Sornsaruht (2019) showing that e-satisfaction does not influence e-loyalty. Meanwhile, Feroza, Muhdiyanto, and Pramesti (2018) and Gotama and Indarwati (2019) cannot prove the connection between website quality relationship with e-loyalty, as well as Rahmalia and Chan (2019) showing that website quality does not influence e-satisfaction.

Likewise, considering the conflicting proofs mentioned above, this study uses the virtual hotel users in Bandar Lampung to examine and analyze the e-satisfaction impact on e-loyalty. Besides, this study wants to prove the effect of website quality on e-satisfaction and e-loyalty. Academically, by reviewing these three influences, this research can strengthen the resulted evidence from similar studies. Practically, this study can help the online platform providers to implement their communication strategy in the e-marketplace to create satisfied and loyal users based on the virtual distribution channel.

2. Literature Review

2.1. Relationship between e-satisfaction and e-loyalty

By surveying sport participants in the United States, Hur et al. (2011) find that e-satisfaction positively influences e-loyalty. After researching the same

relationship utilizing undergraduate and graduate students in Tunisia, Ltifi & Gharbi (2012) locate the positive sign. Also, this sign is confirmed by Ahmad et al. (2017) when investigating the Indian internet customers. Learning the free payment application of the users in Indonesia, Gotama and Indarwati (2019) demonstrate a positive influence of e-satisfaction on e-loyalty. By investigating the students from two universities in Ankara, Kaya et al. (2019) confirm similar evidence.

Additionally, surveying online shoppers in Vietnam, Giao et al. (2020) reveal a positive relationship between e-satisfaction and e-loyalty. By utilizing online banking customers, Haq and Awan (2020) and Sasono et al. (2021) find this same tendency in Pakistan and Indonesia, respectively. Correspondingly, Wang and Prompanyo (2020) affirm this proof when investigating Chinese users of the Sino-Thai cross-border application. Referring to some pieces of evidence, we propose the first hypothesis:

H₁: A positive relationship between e-satisfaction and e-loyalty is present.

2.2. Relationship between website quality and e-satisfaction

The website with superiority will augment the readiness and satisfaction of the users to utilize it (DeLone & McLean, 2004). From the six website quality dimensions proposed, Kim and Stoel (2004) prove that only three of them positively affect e-satisfaction: relevant information, transactional capacity, and response time when learning virtual shoppers of apparel goods. Additionally, in their study utilizing two dimensions: functionality and usability, Bai et al. (2008) infer that both positively influence the online satisfaction of Chinese visitors. Hsieh (2019) investigates four aspects of website quality: system, info, service, and design and their impact on e-satisfaction. After examining the related response, this study deduces a positive sign. After studying e-commerce buyers in Denpasar, according to Tirtayani and Sukaatmadja (2018), the perceived website quality is their satisfaction determinant and infer a positive influence. Consistent with them, Hur et al. (2011) and Giao et al. (2020) confirm the same proof. Referring to some pieces of evidence, we propose the second hypothesis:

H₂: A positive relationship between website quality and e-satisfaction is present.

2.3. Relationship between website quality and e-loyalty

Winnie (2014) attempts to reveal the website quality dimensions affecting e-loyalty, like design, content, and structure. After examining the responses from the

Malaysian internet users in Malaysia, she finds that the content becomes the only one affecting e-loyalty positively. Without separating the dimension effect, the study of Hur et al. (2011) and Giao et al. (2020) declares that website superiority is desirable to create user loyalty. Denoting these facts, we propose the third hypothesis:

H₃: A positive relationship between website quality and e-loyalty is present.

2.4. Research model

Based on the hypothesis proposed in sections 2.1., 2.2., and 2.3, the research model can be drawn and looked at in the first figure.

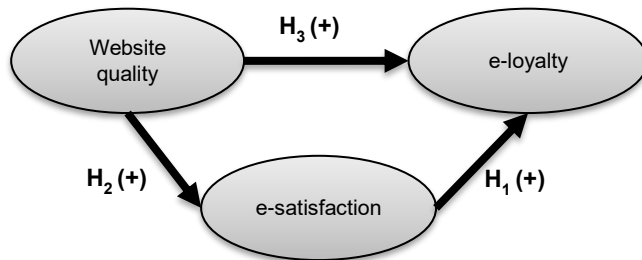


Figure 1. Research Model

3. Research Methods and Materials

3.1. Variable definition

In this study, we treat website quality as an exogenous variable. Furthermore, this website quality has three dimensions with their indicators by denoting Barnes and Vidgen (2002). The three dimensions intended are usefulness, relevant information, and interaction.

A. The usefulness dimension gets measured by eight indicators:

1. This VHO website platform helps me to locate the hotel quickly (USE1).
2. This VHO website platform provides comprehensible interaction (USE2).
3. This VHO website platform can be easily navigated (USE3).
4. This VHO website platform is easy to utilize (USE4).
5. This VHO website platform attracts my attention (USE5).
6. The design is suitable for the VHO website platform (UES6).
7. This VHO website platform is competent (USE7).

8. This VHO website platform gives me a good experience (USE8).

B. The relevant information dimension gets measured by seven indicators:

1. This VHO website platform gives accurate news to me (RI1).
2. This VHO website platform gives trusted news to me (RI2).
3. This VHO website platform gives opportune news to me (RI3).
4. This VHO website platform gives essential news to me (RI4).
5. This VHO website platform brings understandable news to me (RI5).
6. This VHO website platform gives detailed news to me (RI6).
7. This VHO website platform gives the correct format of news to me (RI7).

C. The interaction dimension gets measured by seven indicators:

1. This VHO website platform is reputable (INT1).
2. This VHO website platform is safe to transact (INT2).
3. This VHO website platform protects my details (INT3).
4. This VHO website platform personalizes me (INT4).
5. This VHO website platform brings me the community sense (INT5).
6. This VHO website platform makes me easy to connect with the hotel (INT6).
7. This VHO website platform guarantees all things based on its promise (INT7).

Also, we treat e-satisfaction and e-loyalty as the endogenous variable. The measurement of e-satisfaction mentions the indicators utilized by Haq and Awan (2020), Biswas, Nusari, and Ghosh (2019), and Anderson and Srinivasan (2003). Meanwhile, to measure e-loyalty indicators, we denote the study of Tsao, Hsieh, and Lin (2016) and Haq and Awan (2020). We combine them because of integrating items to measure e-satisfaction and e-loyalty ultimately. Thus, this satisfaction is measured by five indicators:

1. I am happy to operate one of the VHO applications (E-SAT1);
2. I am stress-free when ordering rooms from one of the VHO applications (E-SAT2);
3. I am wise when using one of the VHO applications (E-SAT3);
4. I am accurate in choosing and using one of the VHO applications (E-SAT4);

5. I am satisfied with my decision to use the VHO application when booking a hotel room (E-SAT5).

Additionally, e-loyalty is measured by five following items:

1. I always say good things about one of the VHO applications to anyone around me (E-LOY1).
2. I always suggest anyone using one of the VHO applications to look for information (E-LOY2).
3. I tend to use one of the VHO applications rather than others at the moment (E-LOY3).
4. I will be utilizing one of the VHO applications for the future (E-LOY4).
5. I always motivate anyone to operate one of the VHO applications (E-LOY5).

3.2. Data and Sample

To accumulate the data needed, we utilize a survey. According to Hartono (2012), the survey delivers the questionnaire to the relevant respondents as the sample. In this research context, the respondents are the users of VHO applications, where the database of the population is not accessible, and this survey is between March and October 2020, under the COVID19 pandemic, limiting the face-to-face meeting. For these reasons, the probability sampling method cannot be utilized. Instead, we use snowball sampling based on the beneficial connection with them. Finally, 350 responses are collected, suitable for the theory examination required by a structural equation based on covariance [see Ghazali (2008)]. Moreover, to quantify the responses, we use the Likert scale consisting of five points, from one to five, to reflect absolute disagreement and agreement by referring to Sugiyono (2012).

3.3. Method to analyze data

We use the structural equation model based on covariance because of three points. Firstly, this study wants to examine the facts through some formulated hypotheses. Secondly, the variables utilized cannot be directly observed (Ghozali, 2014). Finally, the number of samples is above 200 (Ghozali, 2008). Moreover, this model is stated in the first and second equations.

$$E-LOY = \gamma_1 WQ + \beta_1 E-SAT + \zeta_1 \quad (1)$$

$$E-SAT = \gamma_2 WQ + \zeta_2 \quad (2)$$

To estimate the path coefficients: β_1 , γ_1 , and γ_2 , we employ the analysis of moment structure (AMOS). According to Ghazali (2014), AMOS is adequate to test the data based on solid previous research evidence. Also, it

creates the output showing convergence validity, the goodness of fit model, model estimation. Likewise, to provide the other relevant outcomes, such as discriminant validity and reliability tests, we use the Warp PLS by denoting Sholihin and Ratmono (2020). By following the central limit theorem enlightened by Bowerman & O'Connell (2003), we assume the model meets the normality assumption because the number of samples is sizeable. For this reason, this assumption is not essential to examine.

Web quality has three dimensions, where each of them has a specific number of items. Hence, according to Ghazali (2014), this form is the second-order construct:

- A. In this form, both dimensions and indicators have a loading factor and average variance extracted (AVE). Moreover, this loading factor and AVE are needed when the convergent and discriminant validities are examined, respectively.
 - If the loading factor is beyond 0.5, the indicators and their dimension are convergently valid.
 - If the AVE is beyond 0.5, the dimensions are discriminately valid.
- B. Moreover, by denoting Ghazali (2016), to test the reliability, we compare the Cronbach Alpha of the valid item group and dimension with 0.7. If their Cronbach Alpha is beyond 0.7, the reliability test is achieved.

E-satisfaction and e-loyalty do not have dimensions; therefore, they are measured directly by their items. Thus, Ghazali (2014) mentions this form as the first-order construct.

- A. In this form, indicators have the loading factor and the AVE. Moreover, this loading factor and AVE are needed when the convergent and discriminant validities are checked, respectively.
 - If the loading factor is beyond 0.5, the indicators are convergently valid.
 - If the AVE is beyond 0.5, the indicators are discriminately valid.
- B. Furthermore, by denoting Ghazali (2016), to test the reliability, we compare the Cronbach Alpha of the valid item group with 0.7. If their Cronbach Alpha is beyond 0.7, the reliability test is achieved.

Before investigating the statistical hypotheses, the model has to pass some goodness of fit measurements. Firstly, the Chi-square to the degree of freedom ratio, where its value has to be below 5 (Ghozali, 2014). Secondly, the parsimony ratio, parsimony normed fit index, and parsimony comparative fit index, where each value has to be above 0.6 (Latan, 2013).

4. Results and Discussion

4.1. Descriptive Statistics

This survey began in March and ended in October 2020 and finally got 350 participants. Moreover, 350 people are classified by age, gender, working status, income, and duration to use the VHO applications. To count the number based on these features, we utilize frequency as the statistic to describe data (see Table 1).

Table 1: The respondent features

Feature	Description	Total	Percentage
Age	From 15 to 24 years old	129	36.9%
	From 25 to 34 years old	146	41.7%
	From 35 to 44 years old	20	5.7%
	From 45 to 56 years old	55	15.7%
	Total	350	100%
Gender	Man	153	43.7%
	Woman	197	56.3%
	Total	350	100%
Working Status	A student	211	60.3%
	A housewife	21	6.0%
	A civil servant	59	16.9%
	A leader in the governmental institution	2	0.6%
	An employee in the private and state-owned company	3	0.9%
	A leader in the private and state-owned company	40	11.4%
	An entrepreneur	14	4.0%
	Total	350	100%
Income	Below IDR2.5 million	93	26.6%
	Between IDR2.5 and less than 5 million	118	33.7%
	Between IDR5 and less than 10 million	118	33.7%
	Above IDR10 million	21	6.0%
	Total	350	100%
Duration to use the VHO application	Below two years	175	50.0%
	From two until four years	175	50.0%
	Total	350	100.0%

4.2. The result of validity and reliability testing

Table 2 presents the validity and reliability testing results related to website quality indicators and dimensions resulted from IBM SPSS AMOS and Warp PLS programs. In Table 2, the items for usefulness have loading factors between 0.557 and 0.828 and an AVE of 0.607. Since these values are above 0.5, the answer to USE1 until USE8 is convergently and discriminately valid. Also, the loading factor for the usefulness dimension (LV_USE) is 0.960; hence, it is convergently accurate to reflect website quality.

Table 2: The loading factors, AVE, and Cronbach Alpha related to website quality dimensions

Indicator	USE	RI	INT	WQ
USE1	0.799			
USE2	0.825			
USE3	0.828			
USE4	0.775			
USE5	0.824			
USE6	0.594			
USE7	0.557			
USE8	0.606			
RI1		0.892		
RI2		0.879		
RI3		0.863		
RI4		0.854		
RI5		0.844		
RI6		0.828		
RI7		0.568		
INT1			0.895	
INT2			0.758	
INT3			0.740	
INT4			0.789	
INT5			0.739	
INT6			0.847	
INT7			0.750	
LV_USE				0.960
LV_RI				0.774
LV_INT				0.914
AVE	0.607	0.677	0.676	0.804
Cronbach Alpha	0.906	0.918	0.919	0.877

Furthermore, the items for the relevant information have loading factors between 0.568 and 0.892. Since these values are above 0.5, the answer to RI1 until RI7 is convergently valid. Also, the loading factor for relevant information dimension (LV_RI) is 0.774; hence, it is convergently accurate to reflect website quality.

Besides, the items for interaction have loading factors between 0.739 and 0.895. Since these values are above 0.5, the answer to INT1 until INT7 is convergently valid. Also,

the loading factor for this interaction dimension (LV_INT) is 0.914; hence, it is convergently accurate to reflect website quality.

Also, the dimensions of website quality have an AVE of 0.804. Since this value is above 0.5, they meet discriminant validity. Additionally, the Cronbach Alpha for the valid responses of usefulness, relevant information, interaction, and website quality is 0.906, 0.918, 0.919, and 0.877. Therefore, their accurate answer is reliable.

E-satisfaction and e-loyalty get directly measured by items. Therefore, according to Ghazali (2014), this form is mentioned as the first-order construct. In this form, indicators will have the loading factor when the validity is examined. In the reliability testing, the valid indicator group has its Cronbach Alpha, which must be compared with the required value. Table 3 presents the situation explained:

- a. E-satisfaction has five items with a loading factor between 0.792 and 0.854, an AVE of 0.728, and a Cronbach Alpha of 0.906. Since the loading factor, AVE, and the Cronbach Alpha exceed 0.5, 0.5, and 0.7, respectively, the answer to these items meets convergent and discriminant accuracy and the precise response is consistent.
- b. E-loyalty has five items with a loading factor between 0.769 and 0.857, an AVE of 0.738, and a Cronbach Alpha of 0.911. Since the loading factor, AVE, and the Cronbach Alpha exceed 0.5, 0.5, and 0.7, the answer to these items achieves convergent and discriminant accuracy and the precise response is consistent.

Table 3: The Testing Result of Validity and Reliability of E-Satisfaction and E-Loyalty

Variable	Items	Loading Factor	AVE	Cronbach Alpha
E-satisfaction	E-SAT1	0.811	0.728	0.906
	E-SAT2	0.797		
	E-SAT3	0.792		
	E-SAT4	0.807		
	E-SAT5	0.854		
E-loyalty	E-LOY1	0.813	0.738	0.911
	E-LOY2	0.841		
	E-LOY3	0.857		
	E-LOY4	0.822		
	E-LOY5	0.769		

4.3. The Model Fit Testing Result

Table 4 exhibits the result of model fit testing with some measurements: the ratio of Chi-square of the degree

of freedom of 4.289, parsimony ratio (P-Ratio) of 0.927, parsimony normed fix index (PNFI) of 0.743, and parsimony comparative fit index (PCFI) of 0.778. Because these values accomplish the critical situation explained by Ghazali (2014) and Latan (2013), the model is suitable for the investigated data.

Table 4: The model fit examination result

Measurement	Value	The necessary situation
Chi-square/DF	4.289	The Chi-square/DF should be below 5 (Ghozali, 2014).
P-Ratio	0.927	P-RATIO, PNFI, and PCFI should be above 0.6 (Latan, 2013).
PNFI	0.743	
PCFI	0.778	

4.4. The Path Coefficient Estimation Result

Table 5 demonstrates the path coefficient estimation result with the critical ratio to examine the causal association based on the formulated hypotheses. Moreover, the probability for are β_1 , γ_1 , and γ_2 is *** or less than 0.000. In this situation, hypotheses one, two, and three are acknowledged because these values are below the 5% significance level. In other words, the positive effect of E-SAT on E-LOY, WQ on E-SAT, and WQ on E-LOY exists.

Table 5: Path coefficient estimation result

Hypothesis	Causal association	Path coefficient	Standard error	Critical ratio
One	E-SAT → E-LOY	$\beta_1 = 0.715$	0.063	11.317***
Two	WQ → E-SAT	$\gamma_2 = 0.632$	0.055	11.438***
Three	WQ → E-LOY	$\gamma_1 = 0.189$	0.051	3.677***

4.5. Discussion

This study effectively proves e-loyalty is positively influenced by e-satisfaction. It means the e-loyalty from using the virtual hotel applications is formed after the users are satisfied. When users get what they expect from the online application, they tell others a positive experience and demand others to utilize the similar application. Based on this positive impact, this study supports Hur et al. (2011), Ltifi & Gharbi (2012), Ahmad, Rahman, and Khan (2017), Gotama and Indarwati (2019), Kaya et al. (2019), Giao, Vuong, and Quan (2020), Haq and Awan (2020), Wang and Prompanyo (2020), and Sasono et al. (2021).

Also, this study effectively proves website quality positively influences e-satisfaction and e-loyalty. Two

pieces of this evidence exist because Airbnb, OYO, RedDoorz, and Airy provide a practical, informative, and interactive website. Although these three dimensions can reflect website quality, the relevant information and RI7 appear as the dimension and the related indicator with the lowest loading factor of 0.774 and 0.568, one-to-one (see Table 2). Based on this evidence, the virtual hotel operators, through their application, should give the correct news for the users by updating the room availability based on the number, the type, and the price. By doing it, the consumers will be able to make the booking decision quickly without dissatisfaction.

Besides, this positive impact appears because the respondents participating in this survey are dominated by the students (60.3%) (see Table 1). The students, according to the research of Kiyici (2012), are active internet users: 45.2% frequently connect their electronic devices online, 18.3% and 22.6% virtually spend from 11 to 20 hours, and more than 20 hours a week, respectively. Also, this positive effect happens because the most significant respondents joining this survey are aged 25 to 34 (41.7%) (see Table 3). This situation gets supported by the study of Saw, Goh, and Isa (2015) when learning the users reserving hotels online in Malaysia. They state 67.2% of them come from a similar range.

By denoting the positive association between website quality and e-satisfaction, this study is consistent with Kim and Stoel (2004), Bai et al. (2008), Hsieh (2019), Tirtayani and Sukaatmadja (2018), Hur et al. (2011), and Giao et al. (2020), displaying that website superiority is needed to create the satisfied users. Additionally, by mentioning a positive relationship between website quality and e-loyalty, this study is consistent with Winnie (2014), Hur et al. (2011), and Giao et al. (2020), declaring that website superiority is essential to create user loyalty.

5. Conclusion

This study examines and analyzes the association between e-satisfaction and e-loyalty, the relationship between website quality and e-satisfaction, and the connection between website quality and e-loyalty through the virtual distribution channels associated with booking hotel rooms. By surveying 350 users of the virtual hotel operator applications in Bandar Lampung: Airbnb, OYO, RedDoorz, and Airy, this study reveals that e-satisfaction encourages the e-loyalty of the VHO application users. Therefore, to implement this situation, the quality of the website is needed.

Although this study effectively proves the hypotheses and supports the previous research, this study is still imperfect. This situation happens because of some matters.

Firstly, the users of virtual hotel operators as the samples only come from Bandar Lampung taken by snowball sampling. Secondly, the determinant of e-satisfaction and e-loyalty just consists of website quality.

- To improve the first one, we suggest that the other scholars enlarge the area where the users are from, for example, the capital city in the provinces in Sumatera, including Lampung. After that, they should calculate the total related users as a population by the specific statistical formula and take the samples randomly by cluster sampling method.
- To improve the second one, we recommend that the other scholars utilize the other determinants of e-satisfaction and e-loyalty, such as hedonism, perceived value, e-trust, and users' age.

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